

A B S T R A C T

A block dead zone scale generator (202) receives an image signal and a prediction error, analyzes the pattern or prediction performance of a target block, and outputs a dead zone scale suitable for the pattern or prediction performance of the block. A dead zone generator (201) receives a dead zone scale from the block dead zone scale generator (202) and an MB quantization parameter from a quantization control device (103), calculates a dead zone width from the zone scale and the MB quantization parameter, and outputs the dead zone width. A quantization device (102) quantizes an orthogonal transformation coefficient supplied from an orthogonal transformation device (101) by using a dead zone from the dead zone generator (201), and outputs a quantized transformation coefficient. This makes it possible to realize quantization with arbitrary strength for each transformation coefficient and for each block comprising a plurality of transformation coefficients as constituent elements, thereby providing a high-quality image encoding technology.